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proceeding from the plate grounded on the water pipe.

By the use of this grounded plate and by replacing the thick hard-rubber cover of the plate holder by a thin sheet of black paper, in two cases distinct images have been produced by the positive discharge. In this case only a few millimeters of air separated the discharge wire from the film. It is then, however, very difficult to prevent the electric stresses from forming the branching images. When this begins the results are quite uncertain. When a negative discharge of the same spark length is used under the conditions which gave the faint positive image, the image produced covers a couple of square inches of plate. Five spark discharges of the negative produce a much greater effect than was produced by a hundred of the positive, in the two cases when the latter discharge produced any effect. The behavior of the positive line is somewhat perplexing. An X-ray tube will operate in this line, the cathode being connected on the cylinder hung in air. But these cathode particles do not appear to be active at the angle.

It may be possible to devise some method of electrometer examination which will not result in the destruction of the instrument. The continuous current has not yet been examined. This, however, involves different conditions from those existing in the circuits here examined. There are many precautions necessary in this work which can not be here discussed, but which will be presented as soon as final results can be given. It has required the use of sixty dozen photographic plates in order to reach the results already attained.

It is evident that the effects here described point to the action of the β and α "rays," in radio-active phenomena.

FRANCIS E. NIPHER

DINICHTHYS INTERMEDIUS NEWBERRY FROM THE HURON SHALE

In the spring of 1907 Dr. Lynds Jones found part of a dinichthyid mandible in the Huron shale near Huron, Ohio, and the writer collected it for the Geological Museum of Oberlin College. The specimen includes all

of the cutting blade of the mandible excepting about one centimeter of the posterior end. The length of the cutting blade is sixteen centimeters. This indicates that the entire length of the mandible was about thirty-five centimeters. The width is eleven centimeters. In size it agrees with mandibles of *Dinichthys intermedius* Newb. and in form it agrees closely with the same species, differing in the greater and more regular concavity of the top between the second cusp and the posterior end of the cutting edge, and in the prominence of the cusp-like projection between the anterior tooth and the main cusp. As pointed out by Hussakof,¹ the prominence of this projection is probably an individual variation and is not of specific value. In the writer's opinion the first difference mentioned is not of specific value. The denticles on the posterior part of the cutting edge are smaller than in most specimens of *Dinichthys intermedius*. Teeth are absent from that part of the jaw where they are prominent in *Dinichthys hertzeri*. The differences between this mandible and those of *Dinichthys intermedius* are so slight that the writer has no hesitation in referring it to that species. The specimen is important in demonstrating the presence of a second species of *Dinichthys* in the Huron shale and in showing that the type of mandible of *Dinichthys intermedius* and *Dinichthys terrelli* did not develop from the *Dinichthys hertzeri* type.

A figure of this specimen will be published later with figures of other specimens recently collected from the Huron shale.

E. B. BRANSON

GEOLOGICAL DEPARTMENT,
OBERLIN COLLEGE

SOCIETIES AND ACADEMIES

SOCIETY FOR EXPERIMENTAL BIOLOGY AND MEDICINE

The twenty-eighth meeting of the society was held in the physiological laboratory of the New York University and Bellevue Hospital Medical College, April 15, 1908. President Lee in the chair.

Members elected.—Otto C. Glaser, Alfred G. Mayer, John B. Murphy, Isaac Ott.

¹ *Bull. Am. Mus. Nat. Hist.*, Vol. XXI., p. 411.

Program¹

"Influence of Cold and Exercise in Phlorhizin Glycosuria," by Graham Lusk.

"The Influence of Carbohydrate on the Protein Metabolism of a Fasting Pregnant Dog," by J. R. Murlin.

"The Transplantation of Parathyroid Glands in Dogs," by W. S. Halsted.

"The Nervous Coordination of the Auricles and Ventricle of the Heart of the Lizard," by Marie Imchanitzky. (Communicated by S. J. Meltzer.)

"The Influence of Diet on the Chemical Composition of the Body," by Lafayette B. Mendel.

"The Chemical Composition of Nonstriated Mammalian Muscle," by Lafayette B. Mendel and Tadasu Saiki.

"Increased Susceptibility of Protozoa to Poison due to Treatment with Alcohol," by Lorande Loss Woodruff.

"The Relative Specificity of Anaphylaxis," by F. P. Gay and E. E. Southard.

"On the Relation of Calcium Metabolism to Tetany and the Cure of Tetany by Administration of Calcium," by W. G. MacCallum and Carl Voegtlin.

"The Relative Toxicity of the Chlorides of Magnesium, Calcium, Potassium and Sodium," by Don R. Joseph and S. J. Meltzer.

"The Action of Calcium upon the Pupil and its Relation to the Effects of Mydriatics," by John Auer and S. J. Meltzer.

"The Destruction of Strophanthin in the Animal Organism," by Robert A. Hatcher and Harold C. Bailey.

"On the Nature of the So-called Glycogenolytic Fibers in the Greater Splanchnic Nerves," by J. J. R. Macleod.

"Prevention of Syphilis in Macacus Rhesus by Atoxyl," by Simon Flexner.

"Further Notes on a Rat Tumor," by Simon Flexner and J. W. Jobling.

"On Nucleic Acids," by John A. Mandel, W. A. Jacobs and P. A. Levene.

"Regarding the Innervation of the Blood Vessels of the Kidney," by R. Burton-Opitz and Daniel R. Lucas.

¹ Authors' abstracts of the papers read before the Society for Experimental Biology and Medicine are published in the *Proceedings of the Society for Experimental Biology and Medicine*. A number is issued shortly after each meeting, and costs 15 cents a copy. Copies may be obtained from the managing editor, William J. Gies, 437 West 59th Street, New York.

"Regarding the Innervation of the Blood Vessels of the Intestine," by R. Burton-Opitz.

"Note on Anaphylaxis to Horse Serum," by Paul A. Lewis.

"A Study of 'Protagon' prepared by the Wilson-Cramer Method," by L. J. Cohen and William J. Gies.

THE twenty-ninth meeting of the society was held at Cornell Medical College, May 20, 1908. Silas P. Beebe in the chair.

Program

"Heredity of some Human Physical Characteristics," by C. B. Davenport.

"The Experimental Production of the Maternal Part of the Placenta in the Rabbit," by Leo Loeb.

"Hemolytic Action of the Venom of *Heloderma suspectum*," by Elizabeth Cooke and Leo Loeb.

"The Biological Relations of Seed Proteins," by Thomas B. Osborne.

"Variation in Hydrochloric Acid Secretion during the Digestive Period," by Nellis B. Foster and Adrian V. S. Lambert.

"The Effects of some Organic Acids on the Secretion of Gastric Juice," by Nellis B. Foster and Adrian V. S. Lambert.

"The Effect of Mechanical Obstruction of the Pyloric Outlet on Gastric Secretion," by Nellis B. Foster and Adrian V. S. Lambert.

"Transplantation of Devitalized Arterial Segments," by Isaac Levin and John H. Larkin.

"A Study of Nitrogen Metabolism in a Case Presenting Short Paroxysms of Fever of Unknown Origin," by Theodore C. Janeway and Herman O. Mosenthal.

"Histological Changes in Transplanted Blood Vessels," by Wilbur Ward. (Communicated by Francis Carter Wood.)

"Note upon the Supposed Presence of a Gastric Hormon in the Salivary Glands," by A. S. Loevenhart and D. R. Hooker.

"The Relation of the Weight of the Stomach and Cecum-contents to the Body Weight in Rabbits," by Don R. Joseph.

"The Inhibitory Influence of Magnesium upon some of the Toxic Effects of Eserin," by Don R. Joseph.

"Influence of Iodides on Autolysis," by L. B. Stookey.

"Relation of the Thyroids to Autolysis," by L. B. Stookey and Vera Gardner.

"On the Physiology of the Thyroids," by L. B. Stookey.

"On the Pharmacology of the Iodides," by L. B. Stookey and Vera Gardner.

"Glycogen Formation from Arabinose in Chicks," by L. B. Stookey and A. Halden Jones.

"Is Oxalic Acid a Product of Hepatic Uricolysis in Man?" by L. B. Stookey and Ethel L. Leonard.

"The Life Cycle of Paramecium," by Lorande Loss Woodruff.

"An Examination of Bardach's New Protein Test," by Emily C. Seaman and William J. Gies.

"A Study of Metabolic Effects of Experimental Polycythemia in Dogs," by William Weinberger (by invitation).

"On the Metabolic Influence of Magnesium Sulfate in Dogs, with Special Reference to the Partition of the Nitrogenous Constituents of the Urine," by Matthew Steel (by invitation.)

"On the Determination of Ammonia, by the Folin Method, in Urines containing Crystalline Ammonio-magnesium Phosphate," by Matthew Steel and William J. Gies.

WILLIAM J. GIES,
Secretary

THE GEOLOGICAL SOCIETY OF WASHINGTON

At the 206th meeting of the society Mr. C. W. Wright presented a "Brief Discussion of the Copper Deposits of Kasaan Peninsula, South-eastern Alaska." He first stated briefly the general geology of Kasaan Peninsula and then described the occurrence of the copper and its possible origin. Greenstone lavas, tuffs, conglomerates, sandstones and limestones constitute the stratified rocks and intruding these are batholithic masses of granodiorite. Granite and syenite dikes invade the granodiorite and in turn are cut by dikes of porphyry, felsite, diabase and basalt. Three types of ore deposits are recognized: (1) Chalcopyrite-magnetite deposits associated with amphibole, epidote, garnet and orthoclase, and occurring as irregular masses 10 to 300 feet in dimensions along the contacts of the intrusives. (2) Chalcopyrite-pyrite-sphalerite deposits associated with quartz and calcite and occurring in fissures or sheer zones 5 to 10 feet wide in the greenstone tuffs. (3) Galena-sphalerite-chalcopyrite and tetrahedrite deposits associated with quartz calcite and barite and occupying fissures 2 to 8 feet wide in the limestones. The first type are commercially the most important, and were described more fully. The facts relative to the origin of these contact metamorphic deposits are: (1) that a considerable transfer of material to local points at the intrusive contacts took place,

(2) that the ore-bodies were deposited after the solidification of those portions of the adjacent intrusives now exposed, (3) that the minerals contained are those which form at relatively high temperatures from gaseous or aqueous solutions, (4) that the contacts of the intrusives have been favorable localities for the passage of these solutions. Though the source of these mineral solutions is hypothetical they are believed to have been derived from an underlying magma and probably the same magma from which the granodiorite, granite and syenite were ejected. Evidence tends to show that the origin of the copper deposits can not be attributed directly to the adjacent intrusive rocks and that both the intrusive and intruded enclosing rocks have played but a passive rôle in their formation. Their genesis is referred to an underlying igneous magma from which the greater portion of the material composing the ore deposits was ejected in a gaseous or aqueous state at a period subsequent to the ejection of the intrusive rocks with which the copper deposits occur.

RALPH ARNOLD,
Secretary

THE AMERICAN INSTITUTE OF CHEMICAL ENGINEERS

The American Institute of Chemical Engineers was organized on June 22 at the Engineers' Club of Philadelphia. The following officers were elected for a term expiring at the next regular meeting, which will be held in December:

President—Samuel P. Sadtler, Philadelphia, Pa.
First Vice-President—Charles F. McKenna, New York City, N. Y.

Second Vice-President—H. Aug. Hunicke, St. Louis, Mo.

Third Vice-President—E. G. Acheson, Niagara Falls, N. Y.

Treasurer—William M. Booth, Syracuse, N. Y.

Secretary—John C. Olsen, Brooklyn, N. Y.

Auditor—Richard K. Meade, Nazareth, Pa.

Directors were elected for terms of one, two or three years as follows:

One year—Ludwig Reuter, Berkeley, Cal.; Thorne Smith, Isabelle, Tenn.; H. P. Brown, Wilmington, Del.

Two years—J. M. Camp, Duquesne, Pa.; Charles A. Catlin, Providence, R. I.; Eugene Haanel, Ottawa, Canada.

Three years—George P. Adamson, Easton, Pa.; David Wesson, Wilmington, Del.; Edward Gude-man, Chicago, Ill.

DAVID WILBUR HORN,
Secretary pro tem.